United States Environmental Protection Agency

Region 10, 1200 Sixth Avenue, Seattle WA 98101

REGIONAL QUALITY ASSURANCE ANNUAL REPORT FOR FISCAL YEAR 1996 AND WORK PLAN FOR FISCAL YEAR 1997

October 1996

Prepared For The

U.S. Environmental Protection Agency
Quality Assurance and Data Unit
Office of Environmental Assessment
Region 10

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I. INTRODUCTION

In accordance with the Quality Management (QM) Program Plan for Region 10 (rev. 09/26/96), a Quality Assurance (QA) Annual Report and Work Plan is prepared and submitted to the Regional Administrator and to the Director of the Quality Assurance Division (QAD) located at EPA Headquarters. The purpose of this combined report and work plan is to annually document and inform Regional Management and QAD of QM activities and capabilities within Region 10. Ultimately, this information allows the Region to implement an effective QA Program while maintaining an efficient use of resources in addition to providing QAD with a feedback mechanism for corrective actions and other programmatic changes. The scope of this document outlines:

- The current Management and Organization of Region 10's QM Program (including the current and anticipated resource distributions for FTE, training, travel, etc..)
- A status on the implementation of Region 10's QM Program Plan
- Region 10's QM Policy regarding mandatory QA requirements for the collection of environmental measurements
- A summary of QM activities (i.e., QA plan reviews, data audits, technical and management system reviews, performance evaluation studies, etc..)
- An assessment of QM activities (corrective actions resulting from outside QAD assessments)
- Anticipated QM activities for the upcoming Fiscal Year (including technical and management system reviews, training, evaluations, etc..)

II. QUALITY ASSURANCE MANAGEMENT AND ORGANIZATION

Region 10's Quality Assurance (QA) Program is centrally managed from the Quality Assurance and Data Unit (referred to as QA Office or QAO) which is located in the Office of Environmental Assessment (OEA). The primary function of the QAO is to ensure Regional compliance with EPA Order 5360.1 (Policy and Program Requirements to Implement the Quality Assurance Program). This is accomplished through the implementation of Region 10's Quality Management Plan (QMP) which requires that all environmental data collected under the Region's auspices are properly documented and of sufficient quality and quantity to meet regional and national program needs (see Region 10 Quality Management Policy).

Authority and responsibility for the management of the Region's QA Program is delegated from the Regional Administrator to the Regional QA Manager (QAM). The QAM serves as the chief of the QAO and reports to the OEA Director. QA technical staff are also on-hand and often act as a technical liaisons with program staff. They have also been delegated limited authority by the QAM to approve/disapprove QA plans and conduct performance and system reviews of regional field and laboratory activities.

A component of the QAO is the Regional Customer Service Office (CSO). The function of the CSO

is to:

- coordinate analytical services,
- track and/or document appropriate information,
- respond to or coordinate a response to field and/or analytical questions,
- coordinate and distribute data packages and storage of case file purges.

A. REGIONAL PROGRAM ORGANIZATION AND RESPONSIBILITIES

Regional programs which generate environmental data require QA support activities. The table on the right provides information on the management responsibilities each program has for implementation at the Regional level (including QA). Environmental measurement data arising from these programs are the product of efforts both internal and external to the Region (e.g., State, Tribal, Local, etc..). These programs also manage enabling federal grants and contract funds which also result in the production of environmental data.

Regional Program Offices	Program Management Responsibilities
Air	Air programs (ambient, stationary & mobile source), radiation program
Ecosystems and Communities	Pesticides, toxic substances.
Water	Public water supply, ambient surface and groundwater, UIC, estuary waters, off-shore discharge and domestic and industrial waste water treatment programs.
Waste and Chemicals Management	RCRA
Environmental Cleanup	Superfund, federal facility and emergency response
Environmental Assessment	Regional QA, air and water monitoring, risk evaluation, and laboratory programs

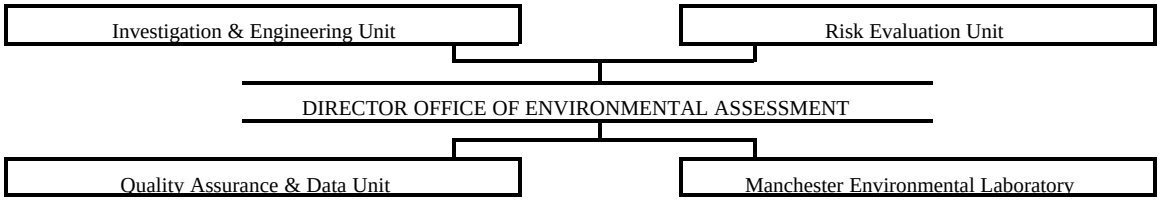
B. OFFICE OF ENVIRONMENTAL ASSESSMENT (OEA)

In concert with program management responsibilities is the Region's need for assessing the condition of the environment. This function is carried out by the OEA.

OEA provides technical support, conducts special studies and analyzes environmental samples. The Office also processes, analyzes, reduces, reviews, evaluates and recommends the use of environmental monitoring data to the program offices. OEA overviews some State and private monitoring programs, and reviews and concurs on federal grants and contractual processes. The data arising from these programs are used on both the regional and national levels.

The units within OEA responsible for performing specific functions (either independently or in a concerted effort with other groups) are comprised of the QAO, Risk Evaluation Unit, Manchester Laboratory and Investigation & Engineering Unit. Management responsibilities for these groups include quality assurance, GIS, REMAP, hydrogeological support, water monitoring, risk assessment, engineering, inspections and laboratory programs. OEA works closely with State and Regional Offices in the surveillance and analyses for the various air, water, RCRA, CERCLA, pesticides and toxic substance programs.

Figure 1 Office of Environmental Assessment Organizational Units



C. QUALITY MANAGEMENT RESOURCES

In Fiscal Year 1996 (FY '96) the QAO remained constant in the number of FTEs supporting both the QA and Data Management functions. Internally, the QAO transitioned all chemists out of the CSO in order to better leverage its technical resources to support technical review functions.

	FY '96 Expenditures	FY '97 Allocations
Total Travel	$20,400	$21,000
"A"	$14,900	$15,000
"T"	$ 5,500	$ 6,000
Total Staffing	20 FTEs	21 FTEs
Management/Admin.	2	2
QA Support		
Chemists	5	5
CSO - EPS, EPA's	2	2
QACs	3	3
Data Management Support		
GIS - EPS, Envr. Scientists	5	6
Data - EPA, Envr. Sci., Engr.	3	3

The budgeting process reflects a policy of sharing resources between organizational units within the Office. OEA staff are therefore given opportunity to participate in intra-Office teaming activities that they would not normally support. Each Office is required to monitor staffing expenditures and budget distributions (other than FTEs). Staffing (broken down by technical classification) and travel resources for the QAO are shown to the left. Training expenditures during FY '96 are discussed below.

In order to promote teaming and to utilize the best qualified 'experts', several people in the Region have QA responsibility in addition to the QAO. These individuals, identified as Quality Assurance Coordinators (QAC), primarily from OEA, have expertise in specific areas such as water, drinking water laboratory certification, biology, microbiology, field activities and data processing. The QAM has the authority to request assistance from the QACs on QA matters related to their area of expertise. Upon request, the QACs function as part of the QAO. The efforts of the QACs increaed to three FTE with the addition of data audit support at the Regional Lab (see Data Audits, page 8).

Training received during FY '96 reflects an overall training budget of approximately $175 per FTE with travel expenditures tracked separately. The QAO encourages staff training through the Region's technical/scientific training program in addition to acquiring outside training opportunities, attending professional conferences and the purchase of publications and books. A list of training activities is provided in Section VI.

III. STATUS OF REGION 10 QUALITY MANAGEMENT PROGRAM PLAN

During FY ‘96, Region 10 revised it’s Quality Management Program Plan (QMPP) to reflect the new re-organization of the Region with particular emphasis towards roles and responsibilities for Quality Management activities. Changes regarding policies and procedures emphasize the use of EPA’s DQO Guidance (G4) along with addressing data/information management QA issues as they relate to EPA Policies on the management and integrity of environmental data. Organizational changes made during FY '95 and implemented during FY ‘96, resulted in the displacement of the air characterization support which once resided within the Environmental Services Division. This disinvestment lead to the retainment of the QM responsibilities that had been previously delegated to this group. As a result, NAMS/SLAMS oversight for sample sites and network assessments are now conducted by the Office of Air with technical oversight for laboratory based pollutant analysis conducted by the QAO. A review of the remaining portions of the QMPP shows that it still meets the Region's management and program needs for the next fiscal year. Building on progress made since 1979, Region 10's QMP is gaining increased acceptance by regional monitoring programs.

Because the Agency has yet to formally adopt and promulgate the new 'R' and 'G' documents for QM activities (other than those previously mentioned), Region 10 is still awaiting implementation of these policies and guidance and anticipate their implementation during FY ‘97. In addition, the QAO will also focus on strengthening State QA Programs over the next fiscal year.

IV. REGION 10 QUALITY MANAGEMENT POLICY

It is the policy of Region 10 that there shall be sufficient Quality Management activities conducted to ensure that all environmental data generated and processed shall be: scientifically valid, of adequate statistical quantity, of known precision and accuracy, of acceptable completeness, representativeness, and comparability, and where appropriate, legally defensible. Specifically, Regional policy shall comply with EPA Order 5360.1, and require the documentation of intended data uses, the establishment of appropriate data quality objectives (DQOs) to ensure the utility of data for its intended use, and the development and implementation of a Quality Assurance Project Plan (QAPP) in accordance with the Agency’s approved and or otherwise accepted guidance.

V. QUALITY MANAGEMENT ACTIVITIES - FY '96

A. QUALITY ASSURANCE PROJECT PLAN REVIEWS

QA Project Plans must be prepared by all regional monitoring programs, contractors, grantees, or other responsible organizations. Completion, review, and acceptance of these plans is a prerequisite for issuance of sample numbers and scheduling of analyses by the regional laboratory, any CLP laboratories, or other facilities. This plan will express, in specific terms, the data quality objectives and the requisite procedures, responsibilities, functional activities, and specific QA and Quality Control (QC) activities necessary to achieve the data quality objectives of each project.

Recognizing that the development of such a plan is a significant undertaking, the QAO has

prepared program-specific QA guidance manuals that provide explicit instructions for preparing QA project plans. These manuals have facilitated the smooth and timely preparation of comprehensive and acceptable QA project plans.

Regional Program	Number of QA Plans

The QAO has assisted in the development and review of 81 project-specific QA project plans during FY '96, with an additional 16 plans reviewed and approved within the Region's Superfund Emergency Response Program and reported to the QAO. By working closely with the EPA Project Managers, the QAO has been able to assist in the development of comprehensive and realistic QAPPs. These are fast track efforts which have resulted in the development of more precise data quality objectives (DQOs) for the site, and the understanding of the importance and use of DQOs by the involved participants, such as field and lab contractors, the regulated community and their contractors, Tribal governments, State and local agencies.

The approximate average number of days to review all plans was approximately 6-7 working days. Implementation of these project plans has resulted in a noticeable and substantial improvement in the overall quality of data generated by the Region.

B. ON-SITE SYSTEM AUDITS

A major objective of Region 10's QA program is to work with the regional programs, State and local agencies, and other interested organizations to improve their data generation and QA programs. This involves routinely reviewing and assessing the QA programs of environmental monitoring and measurement activities within the region. The program includes both on-site field and laboratory system audits and inspections, data audits, and analytical performance evaluations. The purpose of these audits is to assess and enhance each program's capability by recommending corrective measures and provide training where appropriate.

1. NAMS/SLAMS

A review of the monitoring networks in support of NAMS/SLAMS was not conducted by OEA as this function now resides with the Office of Air.

2. Multi-Media

As part of the Multi-Media efforts, OEA staff performed 11 inspections, which included a determination of compliance with the CAA, EPCRA, FIFRA, CWA, SPCC, RCRA, SDWA, TRI and TSCA Programs. OEA coordinated these efforts with EPA's NEIC, Regional Program and State Operations Offices in addition to various State Agencies.

3. NPDES Compliance Inspections

OEA conducted 49 water compliance inspections during FY '96 of which seven were performed in conjunction with the multi-media inspections. These inspections included evaluations of monitoring locations, pre-treatment documentation requirements, sample collection, flowmeter verifications, sample compositor operation, analytical procedures, data calculation and documentation. The purpose of these audits is to determine compliance with permit requirements. Reports are issued to the Office of Water for their review or action.

4. Air Compliance Inspections

OEA conducted 60 air compliance inspections during FY '96 of which seven were performed in conjunction with multi-media inspections. These inspections included evaluations for asbestos (NESHAP), CFCs, source test, source operation, continuous monitoring; best available control technology and lowest achievable emission rates for PSD and air permit activities. These audits are conducted in accordance with both Air Permit and/or Compliance requirements. Reports are issued to the Office of Air for review or action.

5. PCB Inspections

Under the TSCA Investigation program, OEA personnel conducted 52 PCB inspections during FY '95 of which eight were performed in conjunction with multi-media inspections.

6. RCRA Inspections

OEA personnel involvement for RCRA inspections was limited to the coordination of six inspections during FY '96 of which five were performed in conjunction with multi-media inspections. These inspections are conducted by NEIC, Program Offices and State Agencies.

7. Criminal Investigations

Eighteen on-site inspections were performed for the Office of Criminal Investigations during FY '96 by OEA personnel.

8. Oil Pollution Inspections

Four inspections were conducted or coordinated by OEA personnel during FY '96 all of which were performed in conjunction with multi-media inspections.

C. LABORATORY SYSTEM AUDITS

1. State Laboratory Audits

During FY '96, OEA conducted an on-site technical and management systems evaluation on the Washington State Department of Ecology Laboratory located in

Port Orchard, Washington. This evaluation was conducted under the auspices of the Clean Air Act and was limited to the review of PM10 determinations. The previously planned audit of the State of Alaska's Laboratory located in Juneau, Alaska was canceled due to budget constraints and uncertainties.

2. Hazardous Waste Laboratory Audits

QAO staff conducted three on-site laboratory audits for superfund. Deficiencies were noted and reported to the Regional Project Managers for corrective action.

3. Water Laboratory Audits

OEA conducted seven drinking water certification audits for private laboratories located in Washington and one pre-award audit for an OEA lead Office of Water (CWA) project. FY '96 marks a continuation of OEA in providing the State's with assistance in performing certification audits of private laboratories.

4. Air Laboratory Audits

One air laboratory audit was conducted during FY '96 in conjunction with the State of Washington Laboratory Audit mentioned previously. No major deficiencies were noted during this review.

The monitoring programs scheduled for technical system audits by the QAO during FY '97 are shown as follows:

Audit dates during FY '97 will be determined by the program managers. Completion of audits will depend upon whether travel and operational resources are available. The State laboratory scheduled for a technical system audit in FY '97 is again the Alaska Department of Environmental Conservation Laboratory, in Juneau, Alaska.

Programs	Projects	Approx.	Est. Cost
Air/Toxics	NAMS/SLAMS	4 (lab)	$2200
Air/Toxics	NAMS/SLAMS	0 (field)	$0
Water	SDWA	1 (state)	$1000
Water	SODA	15 (lab)	$5000
Water	NPDES	1 (state)	$1000
Haz. Waste	RCRA	1 (state)	$1000
Haz. Waste	RCRA	1 (field)	$500
Haz. Waste	CERCLA	2 (lab)	$500
Haz. Waste	CERCLA	2 (field)	$500
Haz. Waste	CERCLA	1 (state)	$1000

D. DATA AUDITS

The QAO conducts audits for both the completeness of laboratory data purge files (originals) and for data quality. Completeness audits are evidentiary in nature and are designed to detect missing information and/or originals necessary to support data that is submitted in court as evidence. This process involves reviewing, copying and archiving data purge files. Data quality audits are technical evaluations that are used to assess data quality, useability and defensibility.

Audit Type	Number
Completeness	18
Data Quality	75

FY '96 saw a decrease in the amount of data quality audits tracked through the QAO. This was anticipated due to the use of a full FTE to support the review of data generated by the ESAT contractor (located at the Regional Manchester Laboratory). The QAO, however, continued to provide assistance to the Manchester Lab in it's review of data. For the Superfund Program, approximately 40 data packages were reviewed utilizing contract support (along with the development of 16 QA Plans for the Emergency Response Program). The total hours of contractor support for all QA/QC activities for Region 10 was estimated to be 1950 hours or 0.8 FTE. This does not include hours from the ARCS contractors supporting the Superfund Remedial Program as the QA/QC tasks for this contract were combined with the development of work plans and health and safety activities the records of which are contained in each individual site file. A request to have this information reported through the Office of Management will be made for FY '97.

E. PERFORMANCE EVALUATIONS

1. Water Supply and Pollution Control Programs

The Performance Evaluation (PE) Studies are vital for Regional oversight of State and Private laboratories; the WS Studies are used for drinking water laboratory certification by both EPA and the States; the WP and DMR QA Studies are used for waste water laboratory programs by Region 10 and the States. These studies are the most cost effective way to make some judgement of the capability of the laboratories which produce most of the data used by the Water Programs for enforcement and monitoring. Continued funding for these PE Studies is needed.

The analytical performance of the EPA, Contract, State and private NPDES and Drinking Water laboratories were assessed through the NERL semi-annual performance evaluation studies. The following table is a summary of the analytical performance results of both the regional and other nation-wide laboratories which participated in the two most recent water supply and water pollution studies.

PERCENT ACCEPTABLE DATA - WATER PROGRAMS

	Water Supply		Water Pollution		Microbiology	
Laboratories	WS037	WS036	WP035	WP034	WSM26	WSM25
EPA Region 10	95	91	98	99	100	100
All EPA	83	91	92	94	91	99
Region 10 States	93	95	96	97	100	100
All States	92	92	94	94	99	98
Region 10 Privates	90	91	93	93	99	99
All Privates	87	88	90	89	99	98

In general, EPA, State and private laboratories exhibit comparable performance. Region 10 continued submitting "Special Requests" to NERL for laboratories, who were otherwise not eligible, to participate in the WSM (Water Supply Microbiology) PE studies.

2. Discharge Monitoring Performance Audits

The Discharge Monitoring Report (DMR) and QA Performance Evaluation studies have become an affective and integral component of the Region and State permit compliance programs. The Region is placing increased emphasis on the DMR as a major focal point for the initiation of compliance and enforcement actions. The QA audits serve to establish the only quantitative basis from which the accuracy of all the major NPDES permittee's analytical performance can be assessed. Corrective action is taken by each laboratory to correct deficiencies identified through these performance evaluation studies. The success of this program is illustrated by the improvement in the Regional and National Summary of data for the past several years.

PERCENT ACCEPTABLE DATA- DMRQA

	#15		#14		#13	
Permittees	Chem + Tox	% Tox Rpt.*	Chem + Tox	% Tox Rpt.*	Chem + Tox	% Tox Rpt.*
Regional Level	85	24	85	35	92	61
National Level	85	24	93	33	95	77
Alaska	79	14	79	19	84	50
Idaho	83	26	87	27	91	54
Oregon	85	31	92	36	93	88
Washington	89	17	81	43	95	48

* % Tox Rpt.: Represents percentage of permittees reporting Tox data. These do not represent "levels of acceptability". Additionally, the levels of acceptability are only available for combined Chemical and Tox results. Tox has been defined as "Percent of discharge that is lethal to the organism".

3. Air Monitoring Performance Audits

State Air Monitoring Programs in Region 10 participate in audits at several organizational levels to assess their ability to successfully measure pollutant concentrations. These audits are conducted by the State on a quarterly basis and by the Region on an annual basis. State performance at each of these levels are generally good to excellent, with isolated and minor exceptions. The monitoring programs scheduled to participate in Region 10's analytical performance evaluations during FY '97 are as follows:

PROJECTED PERFORMANCE EVALUATIONS

Program	Number of Audits	Number of Analyses [1]	Audit Frequency [2]	Source of Materials
Air -- NAMS/SLAMS	75/yr	1	semi-annually	NERL/RTP[4]
Air -- Source Monitoring	4/yr	6	semi-annually	NERL/RTP
Water -- DMR-QA	255/yr[3]	30	annually	NERL
Water -- NPDES	74/6 mo[3]	1 - 78	semi-annually	NERL
Water -- Drinking Water	112/6 mo	1-147	semi-annually	NERL
Water -- Microbiology (WSM)	9/6 mo	24	semi-annually	NERL
Water -- Microbiology (Spec. Req.)	143/6 mo	24	semi-annually	NERL
Had. Waste -- CERCLA	1/yr	5	semi-annually	NERL
Had. Waste -- RCRA	1/yr	5	semi-annually	NERL

[1] Constitutes the maximum determinations per audit.
[2] Performance audit dates will be established by NERL.
[3] Complete test results for the FY '95 WS, WP, and DMR-QA studies have not been received.
[4] NERL-RTP = National Environmental Research Lab - Research Triangle Park, NC

VI. QUALITY ASSURANCE OFFICE TRAINING AND ACTIVITIES

The courses, seminars, technical meetings and various activities presented or attended by the QAO during FY '95 are as follows:

A. TRAINING PROVIDED

1. QA presentation for the Basic Inspector Training Course
2. QA presentation for the AOAC North West Conference
3. Contractor/RPM training for Chain of Custody Documentation

B. TRAINING RECEIVED

1. Project Officer Certification
2. Hazardous Materials Incident Response Operations
3. Contract Administration Course
4. Preliminary Site Assessment Training
5. Introductory Site Inspection Training
6. Air Monitoring
7. Basic Health and Safety 8 Hour Refresher
8. Basic Hydrogeology/groundwater
9. HRS Scoring for Superfund

C. OTHER ACTIVITIES

1. Participated in development of a Regional information management system.
2. Participated in Regional Inspector Meeting/Round-table.
3. Attended Annual QA Managers Meeting in Chapel Hill, SC.
4. Frequently met with program managers and project officers in order to gain an understanding of their needs and to provide them QA assistance.
5. Participated in a number of project teams.

VII. IDENTIFIED NEEDS

Based on discussion with QAO and involved OEA personnel, it would be appreciated if the following list of priority topics be made available for training in FY '97:

1. Current laboratory sample preparation and analytical techniques.
2. Field sample (soil and sediment) collection and holding time requirements.
3. Advanced auditor training workshop.
4. Training on new Agency QA requirements and procedures (new DQO Process Guidance).

VIII. IMPLEMENTATION SCHEDULE

Listed below is a tentative schedule of QA activities necessary to satisfy FY '97 Headquarters QA program requirements and the Regional QA objectives described throughout this report. Progress of these activities will be reported to the OEA Director.

Activities	Completion Date
Revise Regional QA Management Plan.	As needed
Review/Approve QA Project Plans for all Monitoring Projects	Within 10 days of receipt
Update Regional Audit Manual	September 1997
Conduct Audits identified previously (PE audits and technical system audits)	Per Schedule in audit
Prepare QA Annual Report & Work Plan to Regional and Headquarters	October 1997

* Proposed audit schedules are identified in the QA Audit Section.